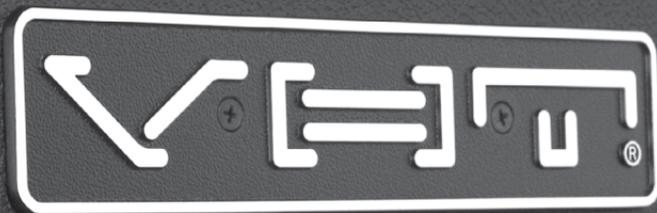


VHT SPECIAL 12/20RT

12-20 Watt Hand-Wired Vacuum Tube Guitar Amplifier

User Manual



IMPORTANT SAFETY INSTRUCTIONS

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this amplifier near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the amplifier.
- 12) Unplug this amplifier during lightning storms or when unused for long periods of time.
- 13) Refer all servicing to qualified service personnel. Servicing is required when the amplifier has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the amplifier, the amplifier has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 14) The amplifier shall not be exposed to dripping or splashing and no objects filled with liquids, shall be placed on the amplifier.
- 15) This amplifier shall be connected to a mains socket outlet with a protective earthing/ground connection.
- 16) The mains/power plug or amplifier coupler is the disconnect device which must remain readily operable.

WARNING: To reduce the risk of fire or electric shock, do not expose this amplifier to rain or moisture.

TABLE OF CONTENTS

OVERVIEW.....	1
FEATURES.....	2
CONTROL PANEL FUNCTIONS.....	3-4
REAR PANEL FUNCTIONS.....	5-6
TONE CONTROL GRAPHS.....	7-8
DEPTH CONTROL GRAPH.....	9
TEXTURE SWITCH GRAPH.....	10
FX RETURN - DEPTH CONTROL GRAPH.....	11
FX RETURN -TEXTURE SWITCH GRAPH.....	12
BOOST CONTROL GRAPH.....	13
BLOCK DIAGRAM.....	14
SCHEMATIC.....	15
TECHNICAL SPECIFICATIONS.....	16



VHT SPECIAL 12/20RT

THE PEDAL-FRIENDLY AMP WITH SELECTABLE POWER RANGES PLUS ALL-TUBE SPRING REVERB AND TREMOLO

The VHT Special 12/20RT adds tube-driven spring reverb and tube tremolo to the pedal-friendly Special 12/20 platform. Like the Special 12/20, the 12/20RT features a unique preamp specifically designed to excel with pedals and multi-effects units, with a pedal-friendly all-tube buffered effects loop with send and return level controls. And like the 12/20, the 12/20RT also accepts a wide range of output tube types, with two power ranges complemented by an adjustable Watts control and a Pentode/Triode switch. The Special 12/20RT also features VHT's unique Depth and Texture controls, a convenient built-in 9-volt DC pedal power supply, and an international mains voltage selector switch.

Like the Special 12/20, the Special 12/20RT's preamp was designed to bring the most out of every effects pedal and multi-effects unit with enhanced clarity, detail, and controlled tube compression. Its low-impedance buffered effects-loop send can effortlessly drive the most difficult pedals without tone or signal loss. Thanks to its variable send and return level controls, the 12/20RT's effects loop can accommodate a wide range of pedal, multi-effects units and rack effects. The 12/20RT's Reverb, Tremolo, Depth and Texture controls are post effects loop, so multi-effects users can plug directly into the effect return and still benefit from the post-effects tube reverb and tremolo, while also fine-tuning the output stage characteristics with the Depth and Texture controls.

To optimize the amp for a wide variety of output tubes, the VHT Special 12/20RT offers two output-power ranges; safely located behind the rear panel, a special voltage range switch provides the proper voltages for 6V6 or EL84 output tubes (in 12-watt low-voltage/low-power mode). The high voltage 20-watt setting provides the ideal voltages for higher-power 6L6 or EL34 output tubes. The Special 12/20RT ships with a pair of 6V6 output tubes (VHT 6V6-to-EL84 socket adapters are required for operation with EL84 tubes). In addition, the Special 12/20RT's variable Watts control can reduce the maximum output power to less than one watt for whisper-quiet volume levels.

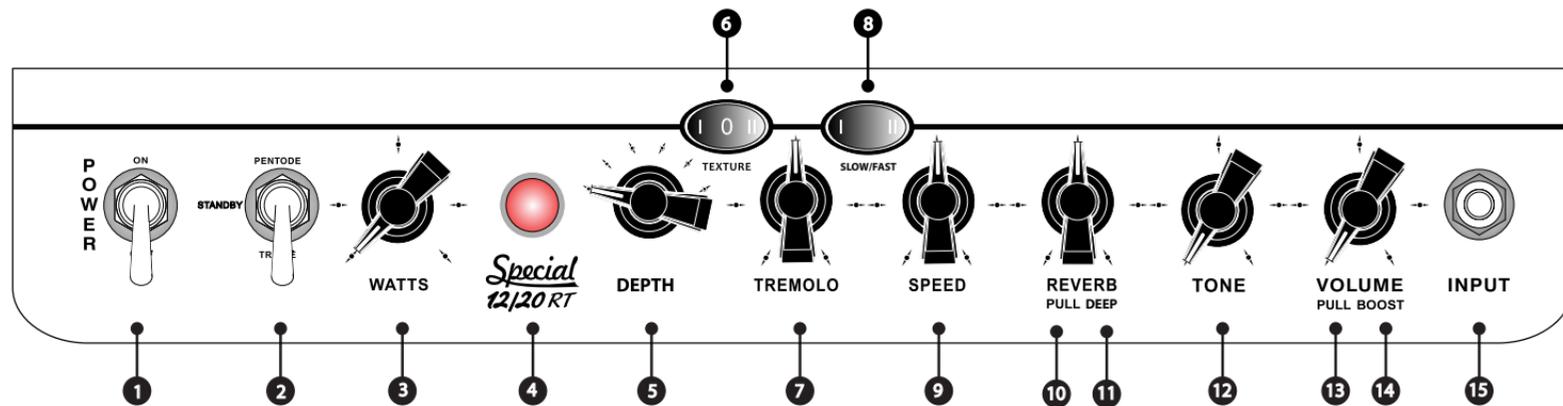
VHT — THE WORLD LEADER IN AFFORDABLE HANDWIRED AMPLIFICATION

VHT SPECIAL 12/20RT FEATURES

- Special Pedal-Friendly Preamp Design
- Tube-Driven Effects Loop with Line Out Jack
- Effects Send and Return Level Controls
- 9-Volt DC Pedal Power Supply
- 6V6 Tube-Driven Spring Reverb with Deep Switch
- Tube Tremolo with Slow/Fast Range Switch
- Switchable 12/20 Max Output
- Variable Watts Control
- Pentode/Triode Switch
- 6-Position Depth Control
- 3-Position Texture Switch
- Footswitchable Push/Pull Boost
- Switchable 4, 8 or 16 Ohm Speaker Outputs
- International Voltage Switch
- Four 12AX7 Tubes
- One 6V6 Reverb Driver Tube
- Two 6V6 Output Tubes
- Accepts EL84 Output Tubes*
- Also accepts 6L6 or EL34 Output Tubes
- Mod-Friendly Handwired Eyelet-Board Construction
- 2-Button Reverb/Tremolo Footswitch (Included)
- 1-Button Boost Footswitch (Included)
- 12" VHT ChromeBack Speaker, 60-watt, 16 ohm (Combo Only)

*With VHT 6V6-to-EL84 Socket Adapters

CONTROL PANEL FEATURES



1. Power Switch: This switch turns the amplifier on or off.

2. Pentode/Standby/Triode: The Triode setting reduces the amplifier's maximum output power to approximately one-half of the Pentode setting. Triode setting produces a richer and smoother tone, with earlier breakup than the Pentode setting. The middle position is Standby mode.

3. Watts Control: The Watts control adjusts the output tube's operating voltage and maximum output power. Maximum output power ranges from less-than 1 watt (fully counterclockwise) to 12 or 20 watts (fully clockwise).

4. Jewel Light: This light will be illuminated when the Power Switch is in the On position; the jewel light will be off when the Power switch is in the Off position.

CONTROL PANEL FEATURES CONTINUED

5. Depth Control: This 6-position rotary switch selects the output tubes' low-frequency roll-off point. Set fully clockwise for the deepest low-frequency extension. Lower settings (counterclockwise) expose more midrange texture and detail; the lowest settings emphasize more presence and bite.

6. Texture Switch: This 3-position rocker switch selects the output's high-frequency roll-off point and also influences the midrange texture. The middle position provides maximum top-end extension and the most harmonically complex texture; the left position provides subtle high-frequency roll-off for a slightly smoother texture; the right position rolls-off more high frequencies for the smoothest texture.

7. Tremolo: This control adjusts the intensity and depth of the tremolo effect. The Tremolo can be switched on or off with the 2-button Reverb/Tremolo footswitch.

8. Slow / Fast Switch: This switch selects the tremolo circuit's range.

9. Speed: This control selects the tremolo speed.

10. Reverb: This control adjusts the intensity of the Reverb effect. The Reverb can be switched on or off with the 2-button Reverb/Tremolo footswitch.

11. Pull Deep: Pull this knob to add more low-end depth to the reverb signal.

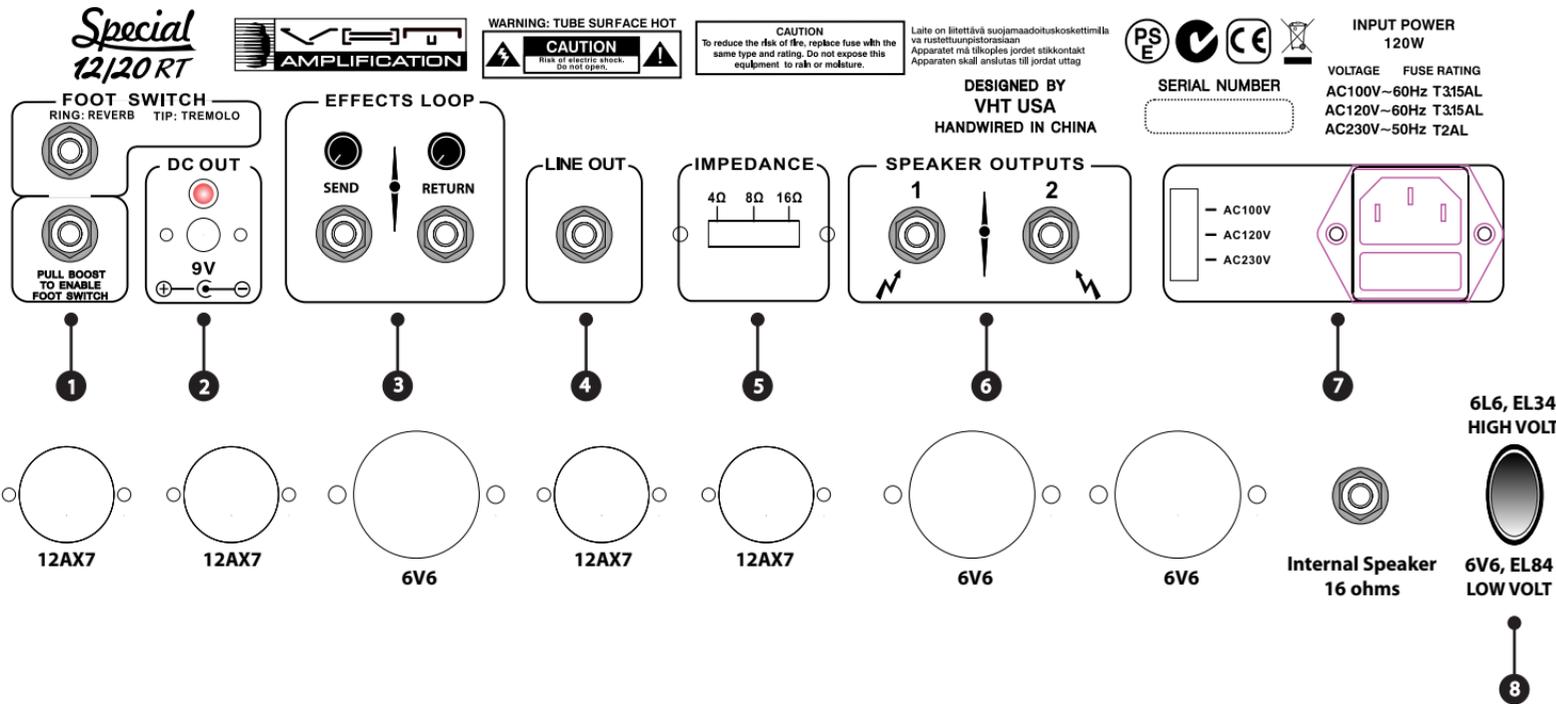
12. Tone Control: This control adjusts the balance of the high and low frequencies.

13. Volume Control: Turning this knob clockwise increases the preamp drive and overall sound level.

14. Pull Boost: Pull this knob to partially bypass the internal tone shaping/voicing circuitry, which boosts the preamp gain and increases the midrange emphasis. This feature can also be accessed by the footswitch.

15. Input: Pedal-friendly 1-megohm input impedance.

REAR PANEL FEATURES



REAR PANEL FEATURES CONTINUED

1. Foot Switch Jacks: Plug the 1-button Boost footswitch into the lower jack. Plug the 2-button reverb/Tremolo footswitch into the upper button.

NOTE: THE BOOST FOOTSWITCH WILL ONLY FUNCTION WHEN THE VOLUME KNOB IS IN THE PULLED POSITION.

2. DC Out: Plug the included 9-volt DC power supply cable into this jack to power your pedal(s) or pedal board. The LED will illuminate at all times when powered. If the LED is not illuminated, check the internal DC Out fuse.

3. Effects Loop Send and Return Jacks: The post-preamp Effects Loop can accommodate a wide range of effects. The send level is dependent on the preamp gain. High preamp gain levels may overdrive some sensitive guitar-level effects pedals. The Return jack has a pedal-friendly 1 megohm input impedance.

4. Line Out Jack: The preamp Line Out is in parallel with the Effects Loop Send and Return jacks, it can be used to send a tube-buffered low-impedance (unbalanced) signal to other equipment such as mixing consoles or other amplifiers. Multiple VHT Special 12/20RT, Special 12/20 or Special 6 Ultra amplifiers can be linked by connecting the Line Out jack to the Effects Return of the second amplifier. Several Special series amplifiers can be linked in this manner, with the first amplifier's preamp serving as the master preamp for all additional amplifiers.

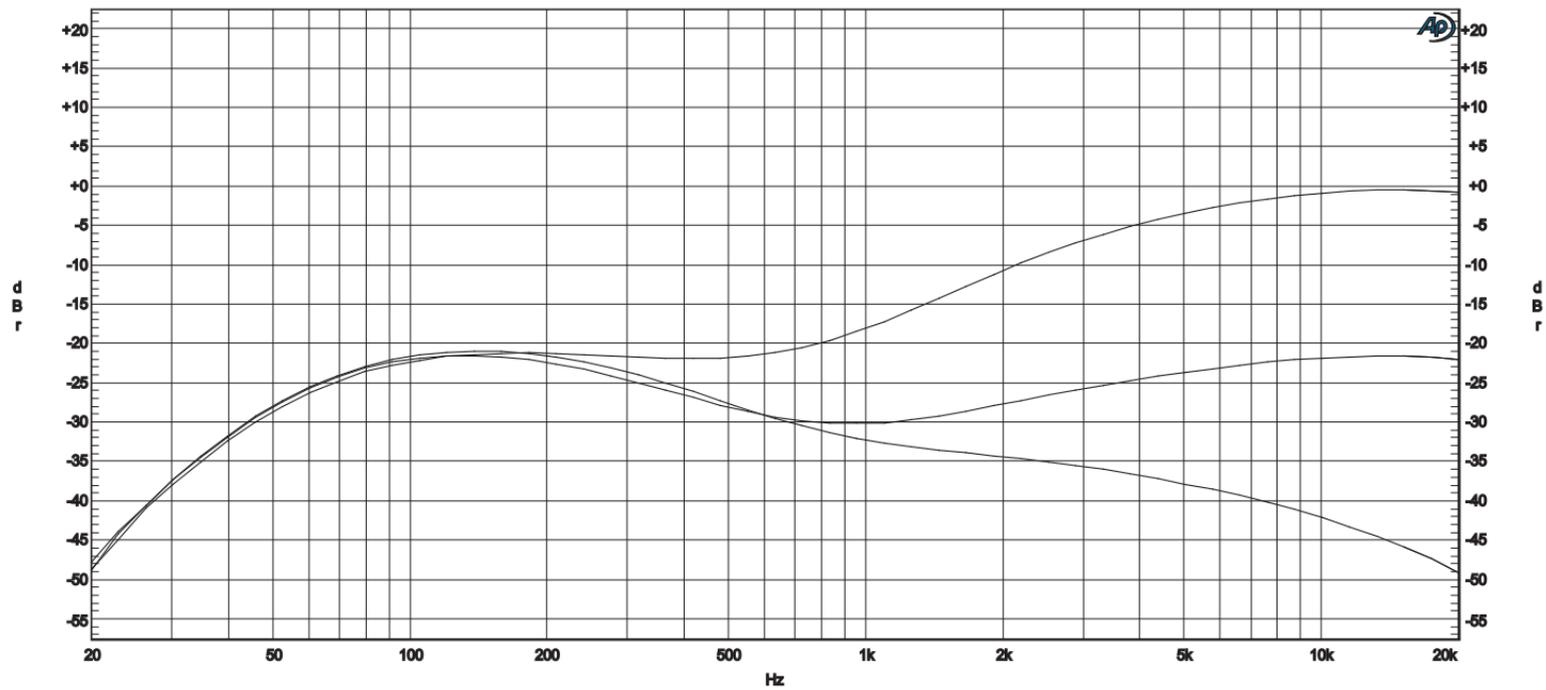
5. Impedance Selector: This 3-position slide switch selects the appropriate output impedance to match your speaker cabinet's impedance.

6. Speaker Output Jacks: These two jacks are wired in parallel. The Special 12/20RT combo has a 16-ohm speaker that is connected to the internal speaker jack. The combo's speaker remains connected when using the external Speaker Output jacks. When using the combo with an additional 16 ohm speaker cabinet, switch the Impedance selector to 8 ohms.

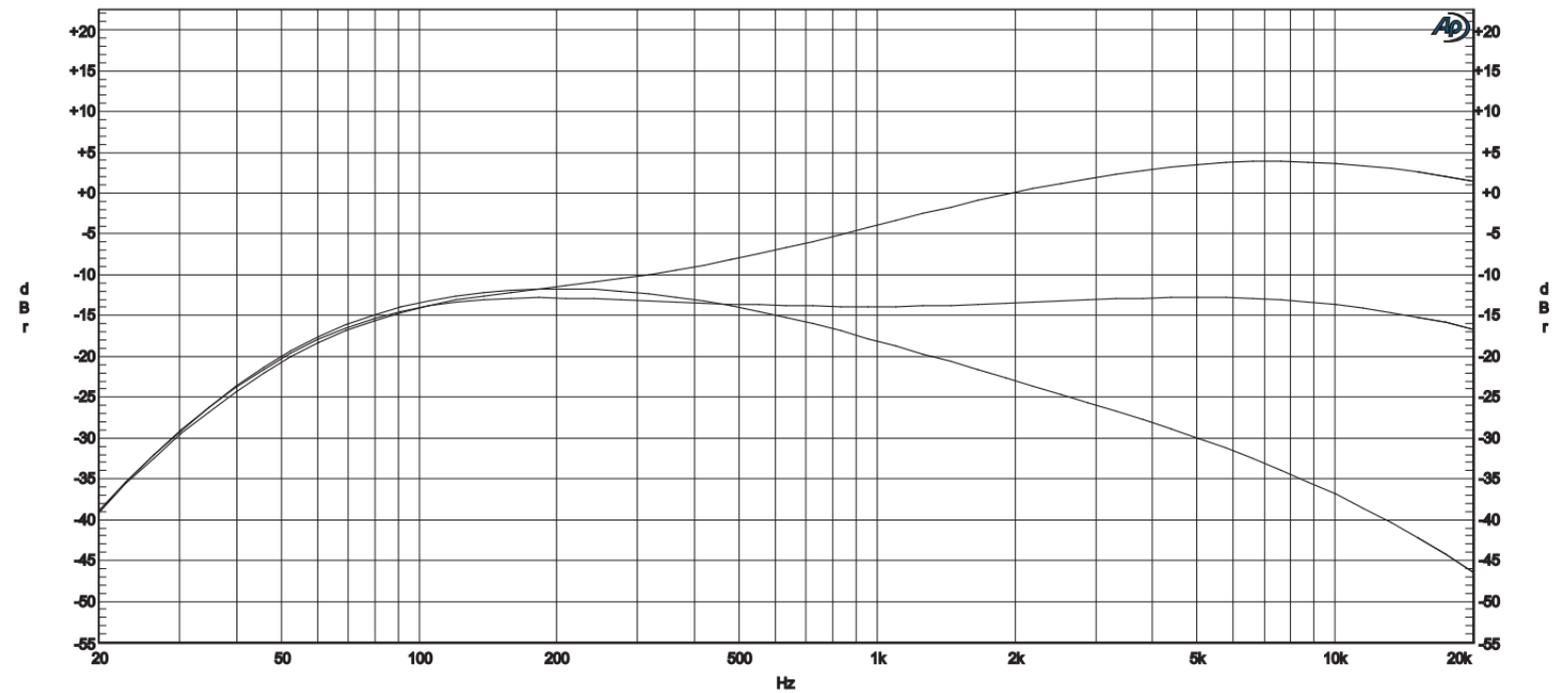
7. Power IEC Receptacle/Line Voltage Selector: Use the included power cord with this unit in accordance with the AC line voltage and frequency ratings listed on this manual and rear panel of this amplifier. Your amplifier will ship with the correct voltage for your region; when traveling to different countries, remove the clear plastic protector and flip the switch to the appropriate voltage. For lowest noise and safest operation, always provide the amplifier with proper AC grounding.

8. 12/20-Watt High/Low Power Voltage Selector: Located behind the rear panel, this switch selects the appropriate maximum voltage for each output tube type. Set it to the 20-watt High-Volt position when using 6L6 or EL34 output tubes. Set it to the 12-watt Low Volt position when using 6V6 or EL84 output tubes. (EL84 output tubes require 6V6-to-EL84 tube socket adapters.)

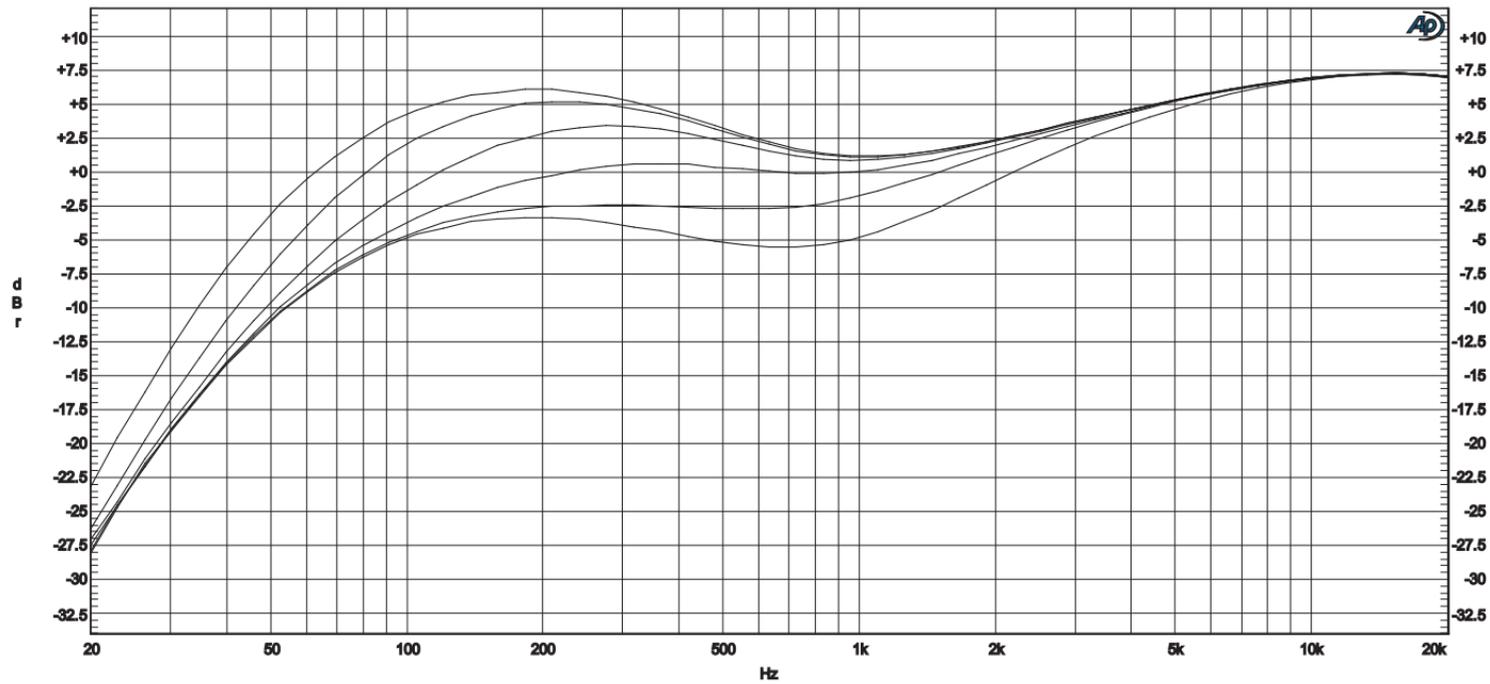
TONE CONTROL — NO BOOST



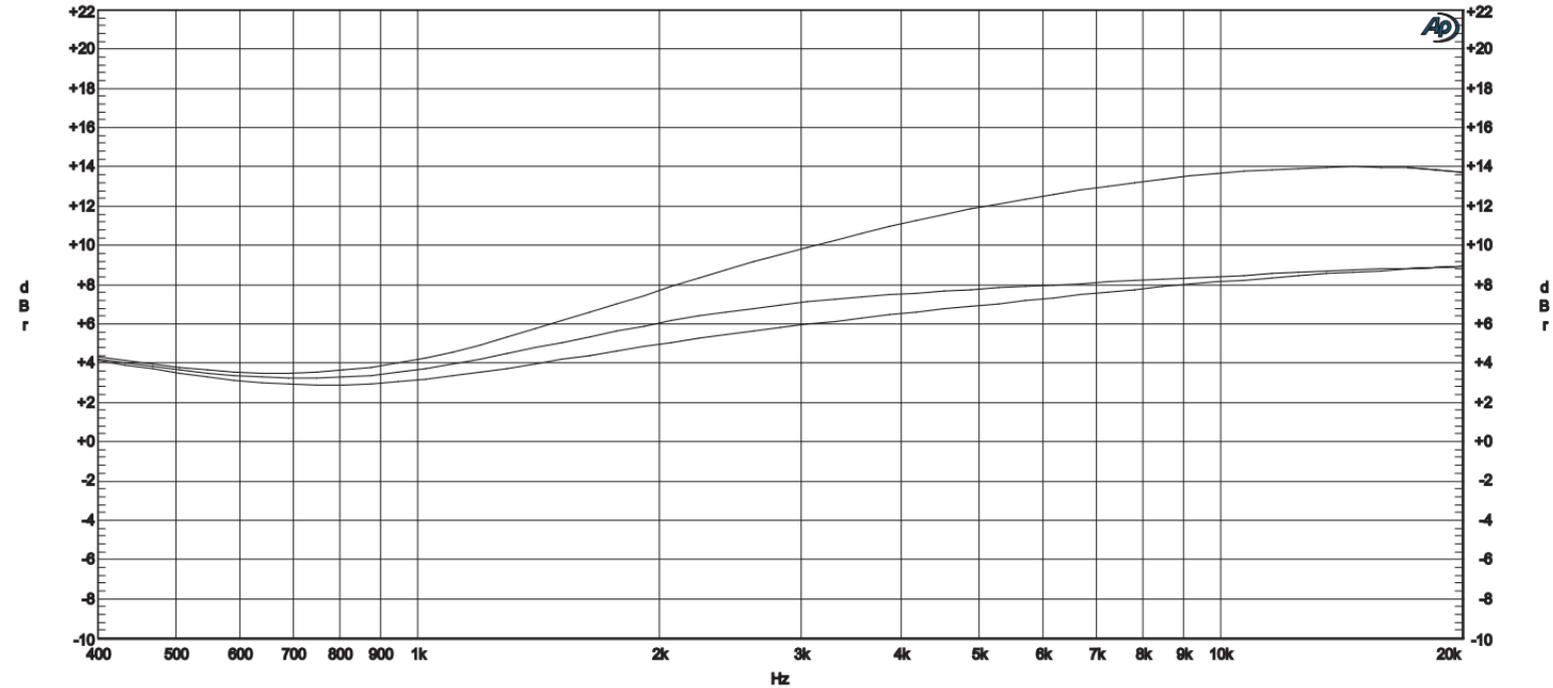
TONE CONTROL — PULL BOOST



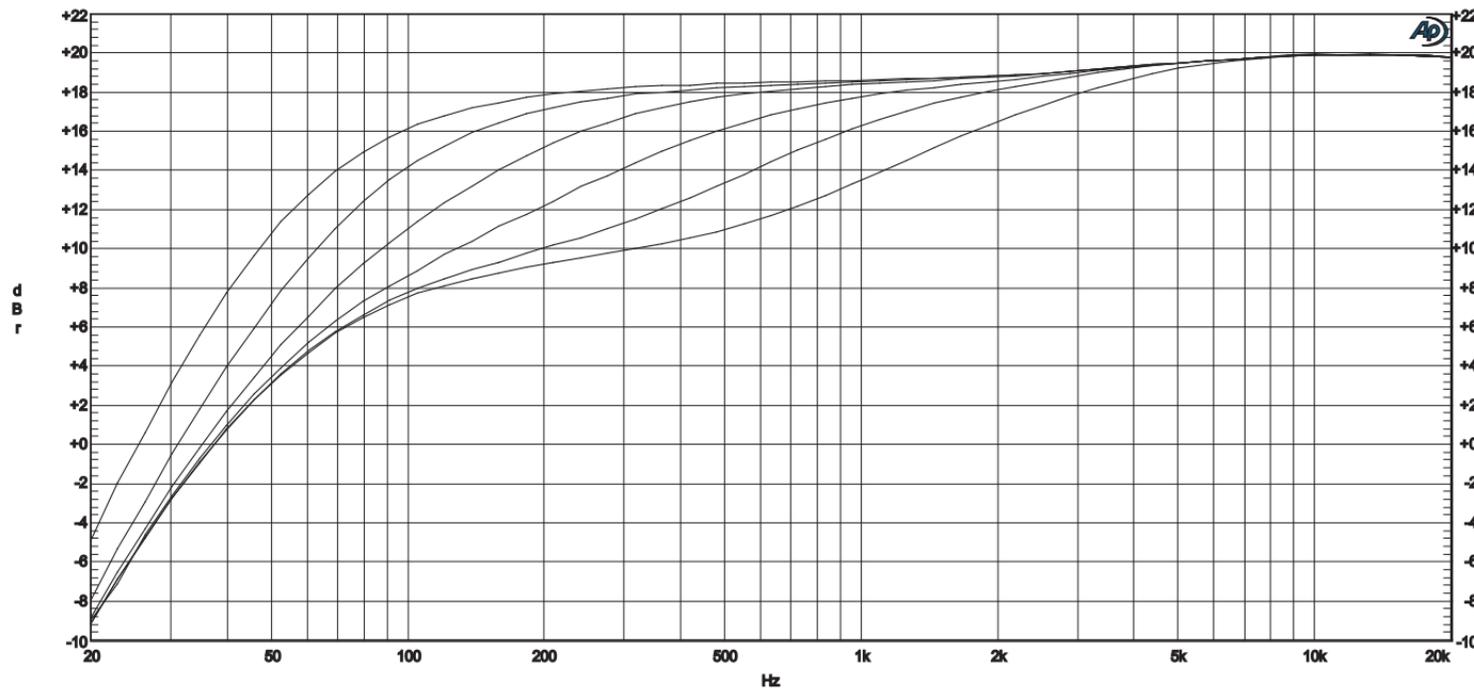
DEPTH CONTROL — PREAMP INPUT (NO BOOST)



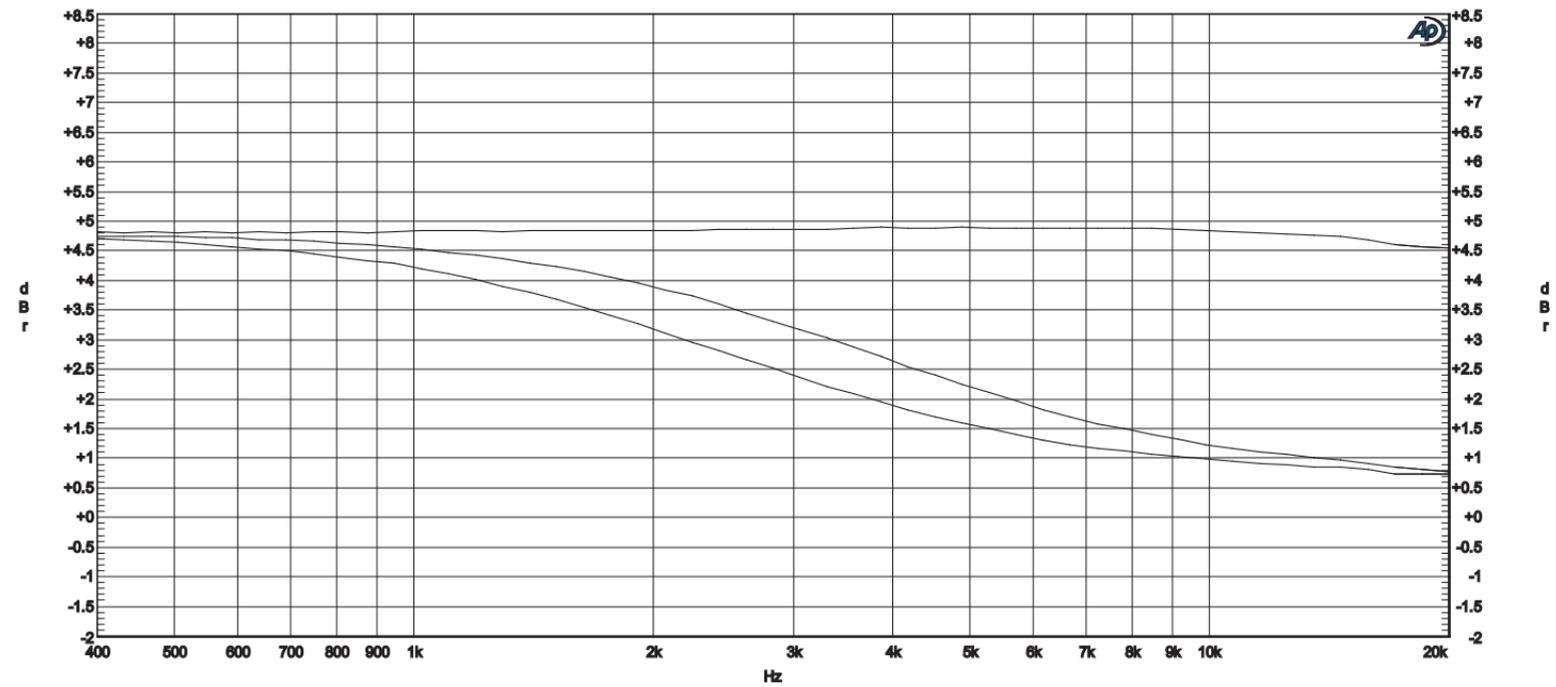
TEXTURE SWITCH — PREAMP INPUT (NO BOOST)



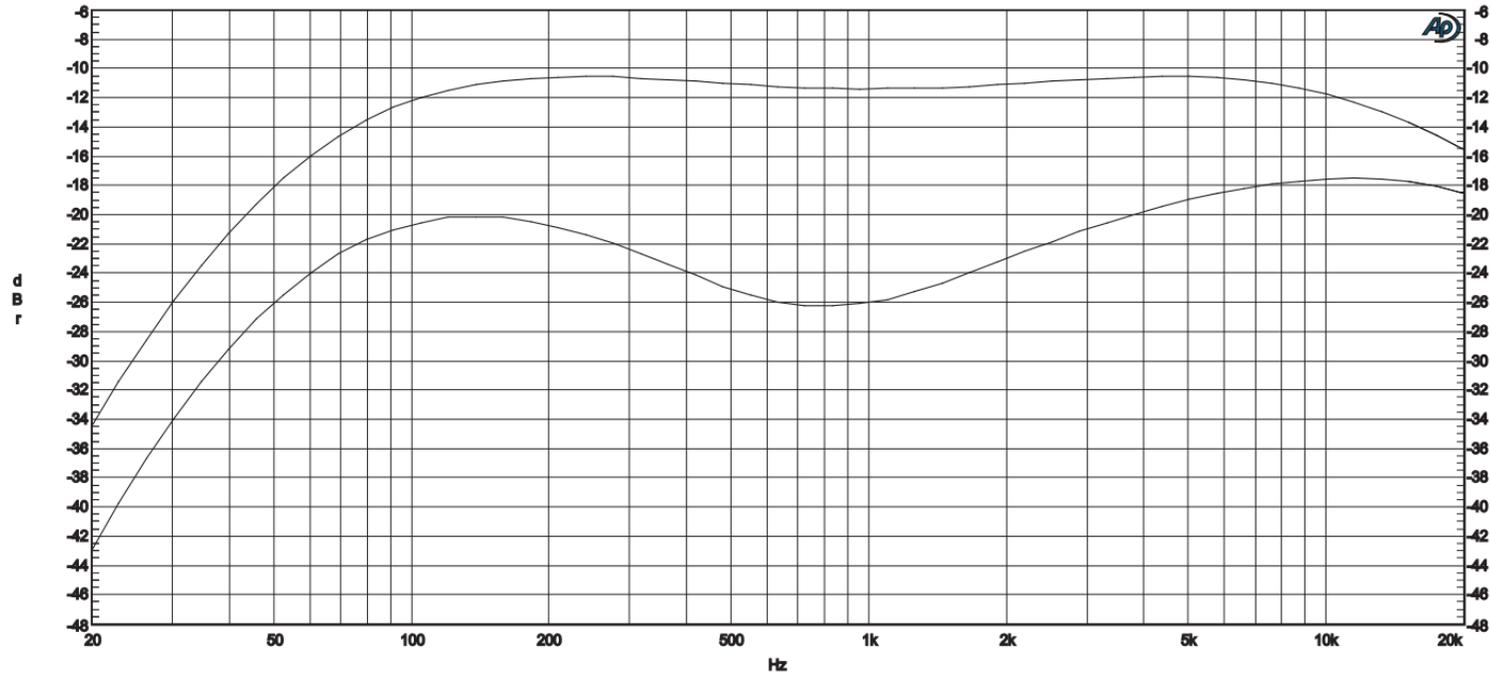
DEPTH CONTROL — EFFECTS RETURN INPUT



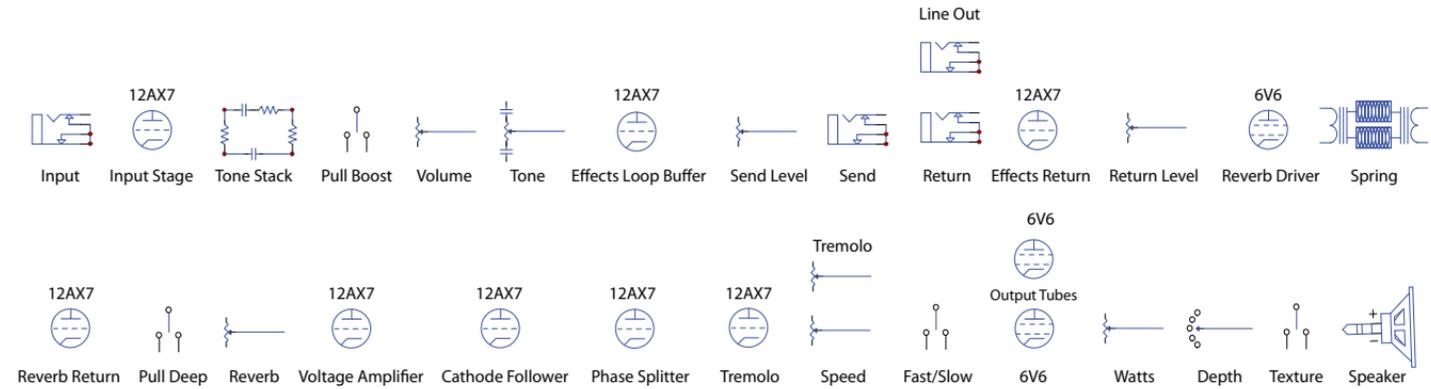
TEXTURE SWITCH — EFFECTS RETURN INPUT

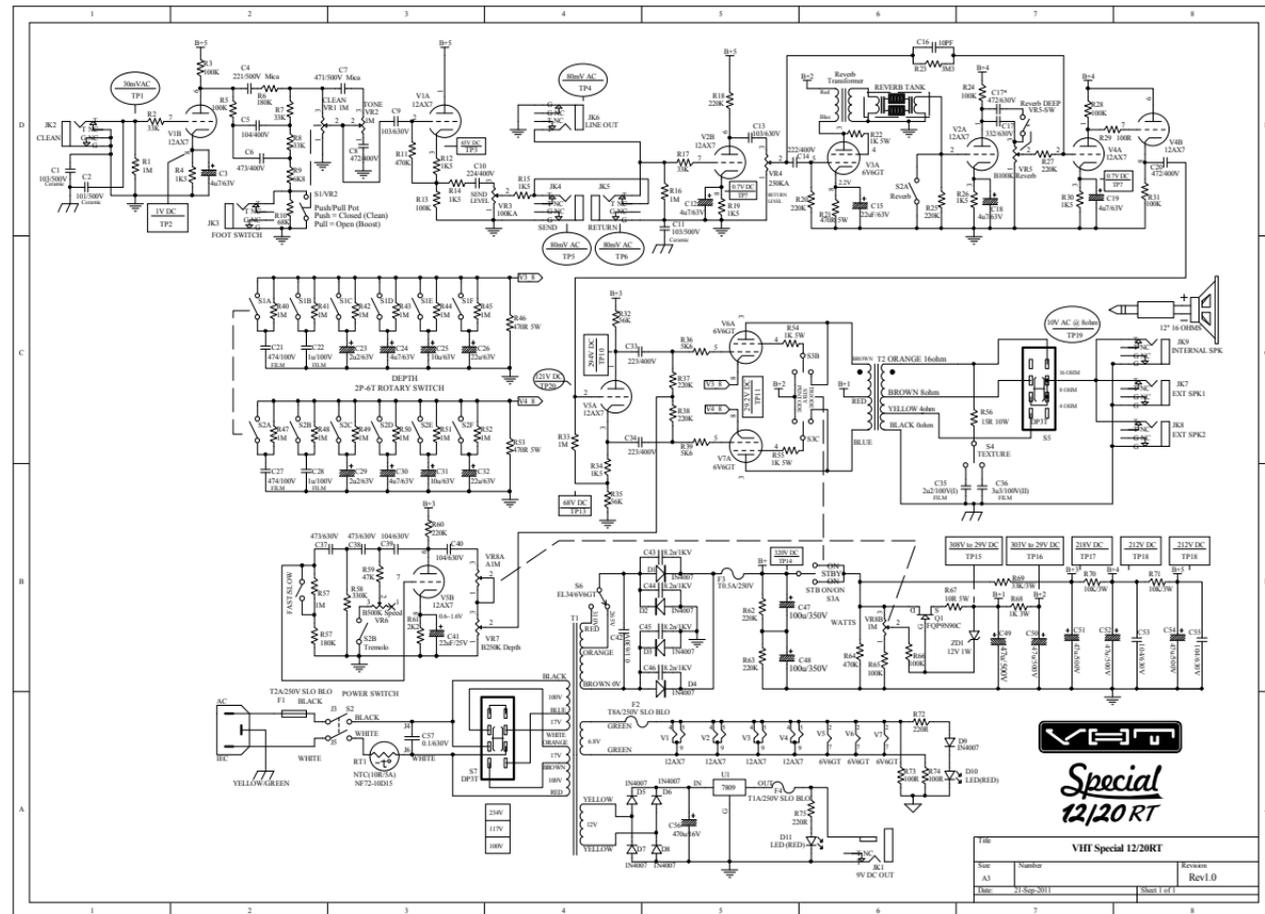


BOOST — ON/OFF



BLOCK DIAGRAM





TECHNICAL SPECIFICATIONS

Name/Model:

VHT Special 12/20 – 12-20 watt hand-wired vacuum tube guitar amplifier

Power Requirements & Consumption:

**100/115VAC, 50/60Hz; 120VAC, 60Hz;
220/230/240/VAC, 50/60Hz**

Maximum Output Power:

12-20 watts (depending on output tube type and Volt setting)

Speaker (combo only):

One 12" VHT ChromeBack (60-watts, 16 ohms)

Amp Type:

All-tube hand-wired push/pull cathode biased output stage

Tubes:

Four 12AX7; three 6V6

Controls:

Volume (with Pull-Boost), Tone, Reverb (with Pull-Deep), Tremolo Speed, Tremolo Fast/Slow Range, Tremolo Intensity and Depth, Texture, Depth, Watts, Pentode/Triode, Effects Send Level, Effects Return Level, High/Low Volts

Cabinet:

Finger jointed birch plywood

Cosmetics:

Black vinyl, white piping, and black grille cloth

Dimensions (H x W x D):

**Combo: 19" x 19.5" x 10.5" (475mm x 495mm x 265mm)
Head: 11" x 19.5" x 8.5" (280mm x 495mm x 215mm)**

Net Weight:

**Head: 28 lbs. (12.5 KG)
Combo: 43 lbs. (19.5 KG)**

LIMITED WARRANTY INFORMATION

This amplifier is warranted, to the original Purchaser, to be free from defects in material and workmanship for a period of five (5) years, excluding the tubes and speaker, which are warranted for ninety (90) days, from the original date of purchase.

The manufacturer shall, at its option, either repair or replace the defective product if the product is returned to the original place of purchase. If any product returned is not defective within this warranty, the manufacturer shall so advise the Purchaser and thereafter shall dispose of said product in accordance with the Purchaser's instructions and at the Purchaser's cost. This warranty is not transferable by the Purchaser.

The warranty shall not apply to wearable parts, these items include, but are not limited to, amplifier knobs, feet, and handles.

The warranty shall not apply, if the product has been misused or damaged as a result of neglect, abuse, alteration, improper handling, unauthorized repair or modification, accident or causes external to the product, such as, but not limited to, excessive heat or humidity.

The manufacturer's sole and exclusive maximum liability for any claim by the Purchaser shall not exceed the wholesale value of the product. In no event shall the manufacturer be liable for any indirect, incidental, collateral, exemplary, or consequential damages of losses arising out of the Purchaser's purchase of the product. The above limitations may not apply in some states (U.S.), international regions or countries.

VHT AMPLIFICATION

HANDWIRED IN CHINA